

Dr. John Ferguson presents...50 Reasons to Oppose Fluoridation

My mission is to help as many people in my lifetime as I can ~ especially children!

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- 1) Fluoride is not an essential nutrient (NRC 1993 and IOM 1997). No disease has ever been linked to a fluoride deficiency. Humans can have perfectly good teeth without fluoride.
 - 2) Fluoridation is not necessary. Most Western European countries are not fluoridated and have experienced the same decline in dental decay as the US (See data from World Health Organization in [Appendix 1](#), and the time trends presented graphically at <http://www.fluoridealert.org/who-dmft.htm>). The reasons given by countries for not fluoridating are presented in [Appendix 2](#).)
 - 3) Fluoridation's role in the decline of tooth decay is in serious doubt. The largest survey ever conducted in the US (over 39,000 children from 84 communities) by the National Institute of Dental Research showed little difference in tooth decay among children in fluoridated and non-fluoridated communities ([Hileman 1989](#)). According to NIDR researchers, the study found an average difference of only 0.6 DMFS (Decayed Missing and Filled Surfaces) in the permanent teeth of children aged 5-17 residing in either fluoridated or unfluoridated areas (Brunelle and Carlos, 1990). This difference is less than one tooth surface! There are 128 tooth surfaces in a child's mouth. This result was not shown to be statistically significant. In a review commissioned by the Ontario government, Dr. David Locker concluded:

"The magnitude of [fluoridation's] effect is not large in absolute terms, is often not statistically significant and may not be of clinical significance" (Locker 1999).
 - 4) Where fluoridation has been [discontinued](#) in communities from Canada, the former East Germany, Cuba and Finland, dental decay has not increased but has actually decreased (Maupome 2001; Kunzel and Fischer, 1997,2000; Kunzel 2000 and Seppa 2000).
 - 5) There have been numerous recent reports of dental crises in US cities (e.g. Boston, Cincinnati, New York City) which have been fluoridated for over 20 years. There appears to be a far greater (inverse) relationship between tooth decay and income level than with water fluoride levels.
 - 6) Modern research (e.g. [Diesendorf 1986](#); [Colquhoun 1997](#), and De Liefde, 1998) shows that decay rates were coming down before fluoridation was introduced and have continued to decline even after its benefits would have been maximized. Many other factors influence tooth decay. Some recent studies have found that tooth decay

actually increases as the fluoride concentration in the water increases (Olsson 1979; Retief 1979; Mann 1987, 1990; Steelink 1992; Teotia 1994; Grobleri 2001; Awadia 2002 and Ekanayake 2002).

7) The Centers for Disease Control and Prevention (CDC 1999, 2001) has now acknowledged the findings of many leading dental researchers, that the mechanism of fluoride's benefits are mainly TOPICAL not SYSTEMIC. Thus, you don't have to swallow fluoride to protect teeth. As the benefits of fluoride (if any exist) are topical, and the risks are systemic, it makes more sense, for those who want to take the risks, to deliver the fluoride directly to the tooth in the form of toothpaste. Since swallowing fluoride is unnecessary, there is no reason to force people (against their will) to drink fluoride in their water supply. This position was recently shared by Dr. Douglas Carnall, the associate editor of the British Medical Journal. His editorial appears in Appendix 3.

8) Despite being prescribed by doctors for over 50 years, the US Food and Drug Administration (FDA) has never approved any fluoride product designed for ingestion as safe or effective. Fluoride supplements are designed to deliver the same amount of fluoride as ingested daily from fluoridated water (Kelly 2000).

9) The US fluoridation program has massively failed to achieve one of its key objectives, i.e. to lower dental decay rates while holding down dental fluorosis (mottled and discolored enamel), a condition known to be caused by fluoride. The goal of the early promoters of fluoridation was to limit dental fluorosis (in its mildest form) to 10% of children (NRC 1993, pp. 6-7). A major US survey has found 30% of children in optimally fluoridated areas had dental fluorosis on at least two teeth (Heller 1997), while smaller studies have found up to 80% of children impacted (Williams 1990; Lalumandier 1995 and Morgan 1998). The York Review estimates that up to 48% of children in optimally fluoridated areas worldwide have dental fluorosis in all forms and 12.5% with symptoms of aesthetic concern (McDonagh, 2000).

10) Dental fluorosis means that a child has been overdosed on fluoride. While the mechanism by which the enamel is damaged is not definitively known, it appears fluorosis may be a result of either inhibited enzymes in the growing teeth (Dan Besten 1999), or through fluoride's interference with G-protein signaling mechanisms (Matsuo 1996). In a study in Mexico, Alarcon-Herrera (2001) has shown a linear correlation between the severity of dental fluorosis and the frequency of bone fractures in children.

11) The level of fluoride put into water (1 ppm) is up to 200 times higher than normally found in mothers' milk (0.005 – 0.01 ppm) (Ekstrand 1981; Institute of Medicine 1997). There are no benefits, only risks, for infants ingesting this heightened level of fluoride at such an early age (this is an age where susceptibility to environmental toxins is particularly high).

12) Fluoride is a cumulative poison. On average, only 50% of the fluoride we ingest each day is excreted through the kidneys. The remainder accumulates in our bones, pineal gland, and other tissues. If the kidney is damaged, fluoride accumulation will increase, and with it, the likelihood of harm.

13) Fluoride is very biologically active even at low concentrations. It interferes with hydrogen bonding (Emsley 1981) and inhibits numerous enzymes (Waldbott 1978).

14) When complexed with aluminum, fluoride interferes with G-proteins (Bigay 1985, 1987). Such interactions give

aluminum-fluoride complexes the potential to interfere with many hormonal and some neurochemical signals (Strunecka & Patocka 1999, Li 2003).

15) Fluoride has been shown to be mutagenic, cause chromosome damage and interfere with the enzymes involved with DNA repair in a variety of cell and tissue studies (Tsuetsui 1984; Caspary 1987; Kishi 1993 and Mihashi 1996). Recent studies have also found a correlation between fluoride exposure and chromosome damage in humans (Sheth 1994; Wu 1995; Meng 1997 and Joseph 2000).

16) Fluoride forms complexes with a large number of metal ions, which include metals which are needed in the body (like calcium and magnesium) and metals (like lead and aluminum) which are toxic to the body. This can cause a variety of problems. For example, fluoride interferes with enzymes where magnesium is an important co-factor, and it can help facilitate the uptake of aluminum and lead into tissues where these metals wouldn't otherwise go (Mahaffey 1976; Allain 1996; Varner 1998).

17) Rats fed for one year with 1 ppm fluoride in their water, using either sodium fluoride or aluminum fluoride, had morphological changes to their kidneys and brains, an increased uptake of aluminum in the brain, and the formation of beta amyloid deposits which are characteristic of Alzheimers disease (Varner 1998).

18) Aluminum fluoride was recently nominated by the Environmental Protection Agency and National Institute of Environmental Health Sciences for testing by the National Toxicology Program. According to EPA and NIEHS, aluminum fluoride currently has a "high health research priority" due to its "known neurotoxicity" (BNA, 2000). If fluoride is added to water which contains aluminum, than aluminum fluoride complexes will form.

19) Animal experiments show that fluoride accumulates in the brain and exposure alters mental behavior in a manner consistent with a neurotoxic agent (Mullenix 1995). Rats dosed prenatally demonstrated hyperactive behavior. Those dosed postnatally demonstrated hypoactivity (i.e. under activity or "couch potato" syndrome). More recent animal experiments have reported that fluoride can damage the [brain](#) (Wang 1997; Guan 1998; Varner 1998; Zhao 1998; Zhang 1999; Lu 2000; Shao 2000; Sun 2000; Bhatnagar 2002; Chen 2002, 2003; Long 2002; Shivarajashankara 2002a, b; Shashi 2003 and Zhai 2003) and impact learning and behavior (Paul 1998; Zhang 1999, 2001; Sun 2000; Ekambaram 2001; Bhatnagar 2002).

20) Five studies from China show a lowering of IQ in children associated with fluoride exposure (Lin Fa-Fu 1991; Li 1995; Zhao 1996; Lu 2000; and Xiang 2003a, b). One of these studies (Lin Fa-Fu 1991) indicates that even just moderate levels of fluoride exposure (e.g. 0.9 ppm in the water) can exacerbate the neurological defects of iodine deficiency.

21) Studies by Jennifer Luke (2001) showed that fluoride accumulates in the human [pineal gland](#) to very high levels. In her Ph.D. thesis Luke has also shown in animal studies that fluoride reduces melatonin production and leads to an earlier onset of puberty (Luke 1997).

22) In the first half of the 20th century, fluoride was prescribed by a number of European doctors to reduce the activity of the thyroid gland for those suffering from hyperthyroidism (over active thyroid) (Stecher 1960; Waldbott 1978). With water fluoridation, we are forcing people to drink a thyroid-depressing medication which could, in turn,

serve to promote higher levels of hypothyroidism (underactive thyroid) in the population, and all the subsequent problems related to this disorder. Such problems include depression, fatigue, weight gain, muscle and joint pains, increased cholesterol levels, and heart disease.

It bears noting that according to the Department of Health and Human Services (1991) fluoride exposure in fluoridated communities is estimated to range from 1.6 to 6.6 mg/day, which is a range that actually overlaps the dose (2.3 - 4.5 mg/day) shown to decrease the functioning of the human thyroid ([Galletti & Joyet 1958](#)). This is a remarkable fact, particularly considering the rampant and increasing problem of hypothyroidism in the United States (in 1999, the second most prescribed drug of the year was [Synthroid](#), which is a hormone replacement drug used to treat an underactive thyroid). In Russia, Bachinskii (1985) found a lowering of thyroid function, among otherwise healthy people, at 2.3 ppm fluoride in water.

23) Some of the early symptoms of [skeletal fluorosis](#), a fluoride-induced bone and joint disease that impacts millions of people in India, China, and Africa, mimic the symptoms of arthritis (Singh 1963; Franke 1975; Teotia 1976; Carnow 1981; Czerwinski 1988; DHHS 1991). According to a review on fluoridation by Chemical & Engineering News, "Because some of the clinical symptoms mimic arthritis, the first two clinical phases of skeletal fluorosis could be easily misdiagnosed" ([Hileman 1988](#)). Few if any studies have been done to determine the extent of this misdiagnosis, and whether the high prevalence of arthritis in America (1 in 3 Americans have some form of arthritis - CDC, 2002) is related to our growing fluoride exposure, which is highly plausible. The causes of most forms of arthritis (e.g. osteoarthritis) are unknown.

24) In some studies, when high doses of fluoride (average 26 mg per day) were used in trials to treat patients with osteoporosis in an effort to harden their bones and reduce fracture rates, it actually led to a HIGHER number of fractures, particularly hip fractures (Inkovaara 1975; Gerster 1983; Dambacher 1986; O'Duffy 1986; Hedlund 1989; Bayley 1990; Gutteridge 1990, 2002; Orcel 1990; Riggs 1990 and Schnitzler 1990). The cumulative doses used in these trials are exceeded by the lifetime cumulative doses being experienced by many people living in fluoridated communities.

25) Nineteen studies (three unpublished, including one abstract) since 1990 have examined the possible relationship of fluoride in water and hip fracture among the elderly. Eleven of these studies found an association, eight did not. One study found a dose-related increase in hip fracture as the concentration of fluoride rose from 1 ppm to 8 ppm (Li 2001). Hip fracture is a very serious issue for the elderly, as a quarter of those who have a hip fracture die within a year of the operation, while 50 percent never regain an independent existence (All 19 of these studies are referenced as a group in the reference section).

26) The only government-sanctioned animal study to investigate if fluoride causes cancer, found a dose-dependent increase in cancer in the target organ (bone) of the fluoride-treated (male) rats (NTP 1990). The initial review of this study also reported an increase in liver and oral cancers, however, all non-bone cancers were later downgraded - with a questionable rationale - by a government-review panel ([Marcus 1990](#)). In light of the importance of this study, EPA Professional Headquarters Union has requested that Congress establish an independent review to examine the study's results ([Hirzy 2000](#)).

27) A review of national cancer data in the US by the National Cancer Institute (NCI) revealed a significantly

higher rate of bone cancer in young men in fluoridated versus unfluoridated areas (Hoover 1991). While the NCI concluded that fluoridation was not the cause, no explanation was provided to explain the higher rates in the fluoridated areas. A smaller study from New Jersey (Cohn 1992) found bone cancer rates to be up to 6 times higher in young men living in fluoridated versus unfluoridated areas. Other epidemiological studies have failed to find this relationship (Mahoney 1991; Freni 1992).

28) Fluoride administered to animals at high doses wreaks havoc on the male reproductive system - it damages sperm and increases the rate of infertility in a number of different species (Kour 1980; Chinoy 1989; Chinoy 1991; Susheela 1991; Chinoy 1994; Kumar 1994; Narayana 1994a, b; Zhao 1995; Elbetieha 2000; Ghosh 2002 and Zakrzewska 2002). While studies conducted at the FDA have failed to find reproductive effects in rats (Sprando 1996, 1997, 1998), an epidemiological study from the US has found increased rates of infertility among couples living in areas with 3 or more ppm fluoride in the water (Freni 1994), and 2 studies have found a reduced level of circulating testosterone in males living in high fluoride areas (Susheela 1996 and Barot 1998).

29) The fluoridation program has been very poorly monitored. There has never been a comprehensive analysis of the fluoride levels in the bones, blood, or urine of the American people or the citizens of other fluoridated countries. Based on the sparse data that has become available, however, it is increasingly evident that some people in the population - particularly people with kidney disease - are accumulating fluoride levels that have been associated with harm to both animals and humans, particularly harm to bone (see Connett 2004).

30) Once fluoride is put in the water it is impossible to control the dose each individual receives. This is because 1) some people (e.g. manual laborers, athletes, diabetics, and people with kidney disease) drink more water than others, and 2) we receive fluoride from sources other than the water supply. Other sources of fluoride include food and beverages processed with fluoridated water (Kiritsy 1996 and Heilman 1999), fluoridated dental products (Bentley 1999 and Levy 1999), mechanically deboned meat (Fein 2001), teas (Levy 1999), and pesticide residues on food (Stannard 1991 and Burgstahler 1997).

31) Fluoridation is unethical because individuals are not being asked for their informed consent prior to medication. This is standard practice for all medication, and one of the key reasons why most of western Europe has ruled against fluoridation (see [appendix 2](#)).

As one doctor aptly stated, "No physician in his right senses would prescribe for a person he has never met, whose medical history he does not know, a substance which is intended to create bodily change, with the advice: 'Take as much as you like, but you will take it for the rest of your life because some children suffer from tooth decay.' It is a preposterous notion."

32) While referenda are preferential to imposed policies from central government, it still leaves the problem of individual rights versus majority rule. Put another way -- does a voter have the right to require that their neighbor ingest a certain medication (even if it's against that neighbor's will)?

33) Some individuals appear to be highly sensitive to fluoride as shown by case studies and double blind studies (Shea 1967, Waldbott 1978 and Moolenburg 1987). In one study, which lasted 13 years, Feltman and Kosel (1961) showed that about 1% of patients given 1 mg of fluoride each day developed negative reactions. Can we as a

society force these people to ingest fluoride?

34) According to the Agency for Toxic Substances and Disease Registry (ATSDR 1993), and other researchers (Juncos & Donadio 1972; Marier & Rose 1977 and Johnson 1979), certain subsets of the population may be particularly vulnerable to fluoride's toxic effects; these include: the elderly, diabetics and people with poor kidney function. Again, can we in good conscience force these people to ingest fluoride on a daily basis for their entire lives?

35) Also vulnerable are those who suffer from malnutrition (e.g. calcium, magnesium, vitamin C, vitamin D and iodide deficiencies and protein poor diets) (Massler & Schour 1952; Marier & Rose 1977; Lin Fa-Fu 1991; Chen 1997; Teotia 1998). Those most likely to suffer from poor nutrition are the poor, who are precisely the people being targeted by new fluoridation programs. While being at heightened risk, poor families are less able to afford avoidance measures (e.g. bottled water or removal equipment).

36) Since dental decay is most concentrated in poor communities, we should be spending our efforts trying to increase the access to dental care for poor families. The real "Oral Health Crisis" that exists today in the United States, is not a lack of fluoride but poverty and lack of dental insurance. The Surgeon General has estimated that 80% of dentists in the US do not treat children on Medicaid.

37) Fluoridation has been found to be ineffective at preventing one of the most serious oral health problems facing poor children, namely, baby bottle tooth decay, otherwise known as early childhood caries (Barnes 1992 and Shiboski 2003).

38) The early studies conducted in 1945-1955 in the US, which helped to launch fluoridation, have been heavily criticized for their poor methodology and poor choice of control communities (De Stefano 1954; Sutton 1959, 1960 and 1996; Ziegelbecker 1970). According to Dr. Hubert Arnold, a statistician from the University of California at Davis, the early fluoridation trials "are especially rich in fallacies, improper design, invalid use of statistical methods, omissions of contrary data, and just plain muddleheadedness and hebetude." In 2000, the British Government's "York Review" could give no fluoridation trial a grade A classification – despite 50 years of research (McDonagh 2000, see [Appendix 3](#) for commentary).

39) The US Public Health Service first endorsed fluoridation in 1950, before one single trial had been completed (McClure 1970)!

40) Since 1950, it has been found that fluorides do little to prevent pit and fissure tooth decay, a fact that even the dental community has acknowledged (Scholle 1984; Gray 1987; PHS 1993; and Pinkham 1999). This is significant because pit and fissure tooth decay represents up to 85% of the tooth decay experienced by children today (Scholle 1984 and Gray 1987).

41) Despite the fact that we are exposed to far more [fluoride](#) today than we were in 1945 (when fluoridation began), the "optimal" fluoridation level is still 1 part per million, the same level deemed optimal in 1945! (Marier & Rose 1977; Levy 1999; Rozier 1999 and Fomon 2000).

42) The chemicals used to fluoridate water in the US are not pharmaceutical grade. Instead, they come from the wet scrubbing systems of the superphosphate fertilizer industry. These chemicals (90% of which are sodium fluorosilicate and fluorosilicic acid), are classified hazardous wastes contaminated with various impurities. Recent testing by the National Sanitation Foundation suggest that the levels of arsenic in these chemicals are relatively high (up to 1.6 ppb after dilution into public water) and of potential concern (NSF 2000 and Wang 2000).

43) These hazardous wastes have not been tested comprehensively. The chemical usually tested in animal studies is pharmaceutical grade sodium fluoride, not industrial grade fluorosilicic acid. The assumption being made is that by the time this waste product has been diluted, all the fluorosilicic acid will have been converted into free fluoride ion, and the other toxics and radioactive isotopes will be so dilute that they will not cause any harm, even with lifetime exposure. These assumptions have not been examined carefully by scientists, independent of the fluoridation program.

44) Studies by [Masters and Coplan](#) (1999, 2000) show an association between the use of fluorosilicic acid (and its sodium salt) to fluoridate water and an increased uptake of lead into children's blood. Because of lead's acknowledged ability to damage the child's developing brain, this is a very serious finding yet it is being largely ignored by fluoridating countries.

45) Sodium fluoride is an extremely toxic substance – just 200 mg of fluoride ion is enough to kill a young child, and just 3-5 grams (e.g. a teaspoon) is enough to kill an adult. Both children (swallowing tablets/gels) and adults (accidents involving fluoridation equipment and filters on dialysis machines) have died from excess exposure.

46) Some of the earliest opponents of fluoridation were biochemists and at least 14 Nobel Prize winners are among numerous scientists who have expressed their reservations about the practice of fluoridation (see [appendix 4](#)).

47) The recent Nobel Laureate in Medicine and Physiology, Dr. Arvid Carlsson (2000), was one of the leading opponents of fluoridation in Sweden, and part of the panel that recommended that the Swedish government reject the practice, which they did in 1971. According to Carlsson:

"I am quite convinced that water fluoridation, in a not-too-distant future, will be consigned to medical history...Water fluoridation goes against leading principles of pharmacotherapy, which is progressing from a stereotyped medication - of the type 1 tablet 3 times a day - to a much more individualized therapy as regards both dosage and selection of drugs. The addition of drugs to the drinking water means exactly the opposite of an individualized therapy" (Carlsson 1978).

48) While pro-fluoridation officials continue to promote fluoridation with undiminished fervor, they cannot defend the practice in open public debate – even when challenged to do so by organizations such as the Association for Science in the Public Interest, the American College of Toxicology, or the US Environmental Protection Agency (Bryson 2004). According to Dr. Michael Easley, a prominent lobbyist for fluoridation in the US, "Debates give the illusion that a scientific controversy exists when no credible people support the fluorophobics' view" (See [appendix 5](#)).

In light of proponents' refusal to debate this issue, Dr. Edward Groth, a Senior Scientist at Consumers Union,

observed that "the political profluoridation stance has evolved into a dogmatic, authoritarian, essentially antiscientific posture, one that discourages open debate of scientific issues" (Martin 1991).

49) Many scientists, doctors and dentists who have spoken out publicly on this issue have been subjected to censorship and intimidation (Martin 1991). Most recently, Dr. Phyllis Mullenix was fired from her position as Chair of Toxicology at Forsythe Dental Center for publishing her findings on fluoride and the brain; and Dr. William Marcus was fired from the EPA for questioning the government's handling of the NTP's fluoride-cancer study (Bryson 2004). Tactics like this would not be necessary if those promoting fluoridation were on secure scientific ground.

50) The Union representing the scientists at USEPA headquarters in Washington DC is now on record as opposing water fluoridation (Hirzy 1999). According to the Union's Senior Vice President, Dr. William Hirzy:

"In summary, we hold that fluoridation is an unreasonable risk. That is, the toxicity of fluoride is so great and the purported benefits associated with it are so small - if there are any at all - that requiring every man, woman and child in America to ingest it borders on criminal behavior on the part of governments."

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